

10.0 VISUAL RESOURCES RESPONSES

10.1 Appendix B (g)(6)(A)(i)

Comment

Figure 8.11-1 does not include a scale. Please revise the figure to include a scale. If the map is not at a scale of 1:24,000, please re-scale the map.

Response

Figure 8.11-1 is at a scale of 1:24,000. The scale has been added and the revised figure is presented in Figure 10-1.

10.2 Appendix B (g)(6)(C)

Comment

One Key Observation Point (KOP) was identified to represent the areas most sensitive to visual impacts. Please describe the area this KOP represents (i.e., land use, type of viewer), and the number of viewers at this location.

Response

One KOP was identified during the application process for the simple-cycle project. This previous KOP location was at the boundary between the cities of Vernon and Huntington Park. This KOP was chosen due to the residences located south of this point. There are eight residential units at this location with an estimated residential population of 32 persons. However, this KOP is no longer valid since a new building has been constructed, which completely blocks the view of the MGS from these residences.

10.3 Appendix B (g)(6)(D)

Comment

Please provide the dimensions of all major visible components of the project, including the HRSG units and cooling towers.

Response

The dimensions of all major components are shown in Table 10-1.

10.4 Appendix B (g)(6)(F)

Comment

Please describe the visual impacts of project-related lighting and water vapor plumes (both from the exhaust stacks and cooling towers).

Please provide a discussion of the anticipated effect of project-related visible water vapor plumes on the visual quality of the surrounding area. The extent to which existing plumes are visible in the project viewshed is relevant to the discussion.

Please confirm that the relative humidity value that corresponds with 38F is always 60%.

Please provide the design liquid/gas mass flow ratio for the cooling tower.

Response

Outdoor lighting shall be provided to give at least 2 foot-candles of illumination to all drive areas, parking areas, and walk areas. Stairways and platforms shall have 5 foot-candles of illumination and equipment areas shall have 10 foot-candles of illumination. Pole mounted luminaries shall be high-pressure sodium. Luminaries mounted on buildings or structures will be either high-pressure sodium or metal halide. These lights shall be provided with protective shields or hoods to direct illumination downward and inward toward the areas to be illuminated to minimize nighttime light and glare.

The project site has five diesel-fueled reciprocating internal combustion generators, two natural gas-fueled combustion turbine generators, and a cooling tower. There are plumes that are currently emitted from the stacks of these generators and cooling tower. The plumes from the diesel generators are discernible at start up for a few minutes; otherwise, there are no visible plumes in the warm weather. The plumes from the natural gas-fueled combustion turbine generators and the cooling tower are not visible in the warm weather. As with the existing stacks and cooling tower, the plumes from the MGS will not be visible during warm weather. Plumes tend to form in the winter months, at night, and during early morning hours when the temperatures are very low and humidity is relatively high.

When viewed from the immediate project vicinity, the plumes that would be emitted from the MGS are not expected to cause a change to the view. It should be noted that MGS project site is an existing generating facility in the midst of an industrial environment, and has a very low visual quality of the environment. Thus, the MGS project plumes may result in adverse, but not significant impact on the quality of the existing views.

During the meeting with CEC on January 23, 2002, CEC staff suggested that City of Vernon provide all the required data for performing additional water plume analysis and

CEC staff will perform the analysis. The CEC staff also advised the City to contact Mr. Will Walters of ASPEN Environmental Group (Tel No. 818-597-3407), to obtain the data needs list for performing the water vapor analysis. Accordingly, Mr. Walters was contacted and data needs list was obtained. The details of the MGS specific data requested by Mr. Walters for water vapor plume analysis are presented below.

Provide site latitude in degrees, minutes, seconds north latitude and site longitude in degrees, minutes, seconds west longitude.

Latitude: 33 deg 59 min 56 sec

Longitude: -118 deg 13 min 15 sec

Please summarize for the cooling tower (CT) the design parameters that affect vapor plume formation, including exhaust temperature, exhaust mass flow rate, and liquid to gas ratio. These values should account for a range of ambient conditions that show a reasonable worst-case operating scenario. Data from the five heat balance cases presented in Table 3.4-6 of the AFC are provided in the table provided on the next page; however a similar, alternative range of design parameters may be provided in the response. Update any information provided within the table, if necessary.

The requested data are provided in Table 10-2.

Please indicate if the cooling tower has any plume mitigation features that would reduce the assumed 100% moisture content (i.e. saturated exhaust) that will be assumed for a conventional cooling tower exhaust.

No special features are provided in the cooling tower

For staff to conduct CSVP modeling of the HRSG exhaust plumes, please provide HRSG exhaust parameter data to fill out the following table. The values must correspond to full load operating conditions at the specified ambient conditions. Values from Table 3.4-6 of the AFC were added to the table, please correct them if necessary.

Table 10-2 presents the HRSG exhaust parameters.

Please note that staff intends to model the HRSG using hourly estimated exhaust conditions based on the hourly ambient conditions of the meteorological file used to perform the modeling. Therefore, additional combinations of temperature and relative humidity, if provided by the applicant, will be used to more precisely represent the HRSG exhaust conditions.

Please provide a short discussion regarding the operating assumptions and basis for the HRSG exhaust parameter data that is provided, including power

augmentation (i.e. evaporative cooler) and duct burner operating status. Also, please indicate any relationship between the use of duct burners and/or power augmentation with ambient conditions (i.e., note temperature/relative humidity conditions when either or both are not expected to be operated)

Note: Power augmentation is an evaporative cooler.

Please note that staff intends to model the cooling tower using hourly estimated exhaust conditions based on the hourly ambient conditions of the meteorological file used to perform the modeling. Unless otherwise provided, the cooling tower exhaust will be assumed to be saturated at the exhaust temperature provided, which will then be interpolated through the range of ambient conditions modeled. Therefore, additional combinations of temperature and relative humidity, if provided by the applicant, will be used to more precisely represent the cooling tower exhaust conditions.

The cooling tower parameters are provided in Table 10-3.

The relative humidity value in Table 10-2 at an ambient condition of 38°F is 60%. Previous table had an incorrect value entered.

The design liquid/gas mass flow ratio is 1.03. This information is presented in Table 10-3.

10.5 Appendix B (h)(2)

Comment

Please discuss how the project during construction would comply with the City of Vernon Zoning Ordinance, Article III, Section 26-3-5-4 (b): Outdoor activities and storage may be permitted provided such activities and storage are not visible from the public right-of-way.

Response

In a meeting with Mr. Kevin Wilson, Director of Community Services & Water and Ramon Abueg, MGS Project Manager, Mr. Wilson classified that this zoning ordinance does not apply to structural materials and equipment required for the construction of the MGS. All construction materials and equipment will be stored inside a fenced area of the project site. The MGS will comply with this ordinance by installing a fence to surround the work site and lay down area. The fencing will be covered with polyethylene screening strips such that the temporary presence of equipment and materials at the work site and lay down area will not be visible from the public right-of-way

10.6 §2022 (b)(1)(B)

Comment

Please discuss how the project during operation would comply with the City of Vernon Zoning Ordinance, Article III, Section 26-3-5-4 (b): Outdoor activities and storage may be permitted provided such activities and storage are not visible from the public right-of-way.

Response

The MGS will be behind a fenced area. All activities during the operation of the MGS will be behind the fenced area and inside the control buildings. Materials will be stored inside the fenced area and will not be visible from the right-of-way. The MGS will comply with this ordinance by installing a fence covered with polyethylene screening strips such that materials and outdoor activities will not be visible from the public right-of-way.

10.7 §2022 (b)(1)(C)

Comment

The Land Use section of the AFC indicates that the Zoning Ordinance was last revised in October 1995. The AFC does not indicate whether the ordinance is expected to change between the time of filing of the AFC and certification. If the ordinance is not expected to change, please state as such and provide the source of that information. If it is expected to change, please provide information from the responsible jurisdiction documenting the impending change, the schedule for enactment of the change, and whether the proposed project will comply with the changed standard or ordinance.

Response

There have been various revisions to the City's Comprehensive Zoning Ordinance since October 1995. The revised sections include Sections 26.2.14 to 26.2.18 on Definitions, (R) to (U); Section 26.3.5-4 on development standards concerning off-street parking; Section 26.4.2 concerning regulations applicable to off-street parking; Section 26.4.6 concerning nonconforming buildings and uses; Section 26.5.2 on standard conditions for specific facilities permitted by conditional use permit; and Section 26.5.3 on zoning amendment procedures.

None of these changes have any affect on the MGS project. Mr. Ramon Abueg, MGS Project Manager met with Mr. Kevin Wilson, Director of Community Services & Water for the City of Vernon, on January 29, 2002. Mr. Wilson stated that there are no impending or planned changes to the zoning ordinance that will affect the MGS Project.

* Kevin Wilson, Director of Community Services & Water, 4305 Santa Fe Avenue, Vernon, CA 90058, Tel No. (323) 583-8811 ext. 245.

Table 10-1
Dimensions of Power Plant Structures

Structures	Height (feet)	Length (feet)	Width (feet)	Diameter (feet)	Materials	Color
Turbine-Generator Buildings (1)	56.5	242	225.5	N/A	Reinforced Concrete and Glass	Grey
Diesel Generator Stacks (10)	88.5	N/A	N/A	2.17	Steel	Grey
Gas Turbine enclosures (2)	35	85	25	N/A	Prefinished metal siding, Pre- fabricated Building	Silicon Grey
HRSG Stacks (2)	110	N/A	N/A	11	Steel	Silicon Grey
Heat Recovery Steam Generator (2)	72	118	30	N/A	Steel	Silicon Grey
Gas Turbine Control Module (2)	24	45	15	N/A	Prefinished metal siding, Pre- fabricated Building	Silicon Grey
Pipe Rack	40	225	10	N/A	Steel	Grey
Cooling Tower (1)	45	114	39	N/A	Wood & fiberglass	Grey
Generator Breaker (2)	10	15	10	N/A	Steel	Grey
Startup Transformer (2)	6	10	5	N/A	steel	Silicon Grey
Main MCC Room(1)	24	120	30	N/A	Prefinished metal siding, Pre- engineered Building	Silicon Grey
HRSG Chemical Treatment Enclosure (1)	12	8	8	N/A	Concrete berm with roof	Grey
Station Service Transformers (4)	8	8	30	N/A	Steel	Grey
Aqueous Ammonia Tank(1)	15	NA	NA	10	Steel	Silicon Grey
Water Treatment Building (1)	10	20	45	N/A	Prefinished metal siding, Pre- engineered Building	Silicon Grey

Table 10-1 (continued)
Dimensions of Power Plant Structures

Structures	Height (feet)	Length (feet)	Width (feet)	Diameter (feet)	Materials	Color
Steam Turbine Generator Building (1)	36	50	30	N/A	Prefinished metal siding, Pre-fabricated Building	Silicon Grey
Aux Cooling Skid (1)	12	10	8	N/A	Roof Only	Silicon Grey
Vacuum Pump Skid (1)	12	8	14	N/A	Roof Only	Silicon Grey
Condensate Water Tank (1)	15	N/A	N/A	20	Steel	Grey
Raw Water Tank (1)	35	N/A	N/A	50	Steel	Grey
Instrument/Service Air Skid Enclosure (1)	24	40	25	N/A	Prefinished metal siding, Pre-fabricated Building	Grey
Aux MCC Room (1)	12	30	15	N/A	Prefinished metal siding, Pre-fabricated Building	Grey
Fuel Gas Cooler	12	15	8	N/A	Steel	Grey
Fuel Gas Meter Building (1)	18	30	30	N/A	Steel and supports	Grey
Fuel Gas Compressor Building (1)	30	50	25	N/A	Pre-finished metal siding, Pre-fabricated Building	Grey
Cooling Tower Chemical Treatment	12	30	12	N/A	Concrete berm with roof	Grey
Fire Pump Skid	10	18	18	N/A	Steel	Red
Oil Water Separator	8	30	10	N/A	Steel	Grey
CO ₂ Storage (2)	9	8.2	10	N/A	Steel Enclosure	Silicon Grey
GSU Transformers (3)	16.75	18.3	14	N/A	Steel	Grey

Table 10-2
HRSG Exhaust Parameters

Ambient Conditions	Relative Humidity (%)	Moisture Content (% by MOLE)	Exhaust Flow Rate (klb/hr)	Exhaust Temperature (°F)
Full load with Duct Firing and Evaporative Cooling (except 38°F)				
38°F	60	8.28	1,052.68	218
65°F	50	9.19	1020.26	221
75°F	50	9.52	1,007.84	220
94°F	40	10.50	981.96	222
Full Load no Duct Firing and Evaporative Cooling (except 38°F)				
38°F	60	7.25	1049.51	232
65°F	50	8.10	1016.98	235
75°F	50	9.51	1007.82	222
94°F	40	9.34	978.54	237

Table 10-3
Cooling Tower Parameter Data

Parameter	Cooling Tower Exhausts							
Number of Cells	3							
Angle of Tower Length Axis from North	64° west of North							
Cell Height (meters)	45 feet ½" from top of basin to top of fan stack, stack height 12 feet above tower deck							
Cell Diameter (meters)	Fan diameter 22 feet diameter assume 24 feet stack diameter							
Length of CT housing (meters)	108 feet							
Width of CT housing (meters)	36 feet							
Ambient Temperature (°F)	38°F		65°F		75°F		94°F	
Ambient Relative Humidity (%)	60%		50		50		40	
Duct Burner Status	On	Off	On	Off	On	Off	On	Off
Power Augmentation Status	Off	Off	On	On	On	Off	On	ON
Heat Rejection (MMBtu/hr)	385.347	295.3	384.822	290.9	390.628		386.445	288.504
Liquid/Gas Mass Flow Ratio	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Design Inlet Air Flow Rate	12176000	12176000	12176000	12176000	12176000		12176000	12176000
Exhaust Temperature (°F)	78.13	70.86	89.05	82.84	93.88		100.7	95.47
Exhaust Flow Rate (lb/hr)	12468000	12420000	12468000	12420000	12468000		12420000	12468000
Molecular Weight (estimated)	28.67		28.57		28.54		28.46	
Moisture Content (% by weight) (only if cells are plume-abated)		NA		NA				
Tower Exit humidity	100%	100%	100%	100%	100%		100%	100%

Note: Tower is open on three sides; northeast (longside) is closed.

